Aetna considers the AngioJet Rheolytic Thrombectomy System, also known as the Possis AngioJet Rapid Thrombectomy System, medically necessary for removing fresh blood clots from any of the following vessels:

- Arterio-venous fistulas for hemodialysis by direct anastomosis of artery to vein or by placement of a synthetic graft (e.g., Gortex); or
- Coronary arteries or coronary bypass grafts greater than or equal to 2.0 mm in diameter prior to angioplasty or stent placement; or
- Infra-inguinal peripheral arteries greater than or equal to 2.0 mm in diameter.

Policy

*Please see amendment for Pennsylvania Medicaid at the end of this CPB.

Policy History

Last Review 06/08/2017
Effective: 11/09/2001
Next Review: 06/07/2018

Definitions

Additional Information

Clinical Policy Bulletin Notes
Aetna considers the AngioJet Rheolytic Thrombectomy System experimental and investigational for the treatment of the following indications and for all other indications because its clinical value for these indications has not been established (not an all-inclusive list):

- Acute aortic occlusion
- Acute renal artery thrombosis
- Cerebral venous sinus thrombosis
- Deep vein thrombosis
- Pulmonary embolism
- Thrombosis of the native aortic valve and of the left ventricular assist device in individuals with heart failure.

**Background**

The AngioJet Rheolytic Thrombectomy System (Possis Medical, Minneapolis, MN) consists of a single-use catheter, single-use pump set, and multi-use drive unit. The same drive unit and pump set are compatible with various catheters with different design features. Thrombectomy is accomplished with the introduction of a pressurized saline jet stream through the directed orifices in the catheter distal tip. The jets generate a localized low pressure zone via the Bernoulli effect, which entrains and macerates thrombus. The saline and clot particles are then sucked back into the exhaust lumen of the catheter and out of the body for disposal. Treatment with the device takes about one minute.

United States marketing of the AngioJet System began in 1997 following the receipt of U.S. Food and Drug Administration (FDA) marketing clearance for clot removal in arterio-venous (A-V) fistulas used for dialysis access. In March 1999, the AngioJet System was approved by the FDA for use in native coronary vessels and coronary bypass grafts and in February 2000, an expansion of this indication was made to include the treatment of fresh thrombus from infra-inguinal peripheral arteries greater than or equal to 2.0 mm in diameter.

The AngioJet has been shown to be appropriate for removal of fresh blood clots from native coronary arteries or coronary bypass grafts prior to angioplasty or stent placement in patients sustaining acute myocardial injury. Studies show that the
AngioJet is similar in effectiveness to urokinase in removing blood clots during a heart attack; therefore, the procedure can be used as an alternative to thrombolytic drugs.

Regarding future AngioJet System applications, a four-hospital FDA clinical study is underway to evaluate AngioJet System safety and effectiveness in treating stroke caused by blood clot blockage of the carotid arteries.

Suarez et al (2004) stated that catheter thrombectomy techniques (e.g., aspiration thrombectomy, fragmentation thrombectomy, and rheolytic thrombectomy) are being developed to provide an alternative treatment modality for severe cases of acute massive pulmonary embolism (PE) when thrombolytics are contraindicated. Catheter thrombectomy devices have undergone major advances over the last decade, but literature support of their success is limited.

Current evidence for the effectiveness of rheolytic thrombectomy in pulmonary embolism is limited to case reports and one small case series. Zeni and associates (2003) examined the effectiveness of thrombus removal using the rheolytic thrombectomy catheter (RTC) in 17 patients with acute massive PE. The RTC was successfully delivered and operated via a 0.035-inch guide wire in all attempted cases. Treatment resulted in immediate angiographic improvement and initial relief of PE symptoms (improvement in dyspnea and oxygen saturation) in 16 of 17 patients. One patient developed heart block during the procedure, and further treatment with the RTC was discontinued. Bradycardia occurred in 1 patient (managed with lidocaine). After thrombectomy, 10 patients received adjunctive reteplase thrombolysis for treatment of residual thrombus, and 12 received inferior vena cava filters. In the patient with renal cell carcinoma, histopathological analysis of the evacuated material confirmed tumor origin of the embolism. There were 2 deaths, both within 24 hours of treatment and secondary to PE. One death occurred in a patient who had only minimal thrombus removal after treatment with the RTC and no thrombolysis. The remaining 15 patients showed continued improvement in PE symptoms and were eventually discharged from the hospital with mean length of stay 10.3 +/- 6.5 days (range of 5 to 30 days). The authors concluded that rheolytic thrombectomy can be performed effectively in patients with massive PE. However, a large portion of the patients in this study underwent adjuvant
overnight thrombolytic infusion. Further evaluation in a larger cohort of patients is warranted to assess whether this treatment may offer an alternative or complement to thrombolysis or surgical thrombectomy. The Centers for Medicare & Medicaid Services considers as experimental transvenous (catheter) pulmonary embolectomy procedure for removing pulmonary emboli by passing a catheter through the femoral vein.

The AngioJet is being evaluated for its potential use in the management of patients with deep vein thrombosis. However, there is insufficient evidence to support its use for this indication. Bush et al (2004) describe a new method of thrombus removal, with simultaneous percutaneous mechanical thrombectomy (PMT) by means of the AngioJet and thrombolysis in treating symptomatic lower extremity deep venous thrombosis. These investigators reported that complete thrombus removal was obtained in 15 procedures (65%), and partial resolution in the remaining 8 procedures (35%). The investigators concluded, however, that further outcome measures are needed to examine the effectiveness of this treatment method on preservation of valve function, reduction of chronic venous insufficiency, and improvement in quality of life.

There have been a number of case reports (Siablis et al, 2005; Greenberg et al, 2005; Sternbergh et al, 2000) of the use of the AngioJet thrombectomy catheter for the percutaneous treatment of acute renal-artery thrombosis. However, the effectiveness of AngioJet for this indication needs to be validated by prospective clinical trials.

Current risk of inadequate myocardial perfusion for thrombus embolization in primary coronary interventions is not negligible. Margheri et al (2006) evaluated the safety and effectiveness of the AngioJet coronary device in patients with acute myocardial infarction (AMI). The AngioJet device was used in 116 consecutive patients with AMI and angiographic evidence of extensive thrombosis in a vessel with a reference diameter of greater than 2.5 mm. Glycoprotein IIb/IIIa inhibitors and stents were used. Epicardial and myocardial re-perfusion angiographic parameters, and in-hospital major adverse cardiac events (MACE,
i.e., cardiac death, myocardial infarction, target vessel revascularization) were assessed. The AngioJet was successfully used in all patients. Angiographic analysis showed that the AngioJet significantly improved epicardial coronary flow (p < 0.01), frame count (p < 0.01) and myocardial blush (p < 0.01), while stenting yielded significant improvements only in diameter stenosis, minimum lesion diameter and correlated vessel parameters (p < 0.01). In-hospital MACE were uncommon (9 [8 %]). When compared to an AMI population with similar thrombus burden but not undergoing thrombectomy, the AngioJet population showed significant improvement of reperfusion parameters. Moreover, there was greater AngioJet benefit in the high versus moderate thrombus burden subset; laboratory and operator experience also correlated significantly with final angiographic results. The authors concluded that the findings of this study supports the favorable risk-benefit profile of AngioJet device use in selected patients with AMI when it is employed in experienced laboratories and by trained operators.

On the other hand, De Luca et al (2007) stated that the benefits of adjunctive mechanical devices to prevent distal embolization in patients with AMI are still a matter of debate. In a meta-analysis, these researchers combined data from all randomized studies conducted with adjunctive mechanical devices to prevent distal embolization in AMI. A total of 21 studies with 3721 patients were included (1,877 patients [50.4 %] in the adjunctive mechanical device group and 1,844 [49.6 %] in the control group); 1,502 patients (40.3 %) were randomized in trials with distal protection devices, and 2,219 patients (59.7 %) were randomized in trials with thrombectomy devices. Adjunctive mechanical devices were associated with a higher rate of post-procedural thrombolysis in myocardial infarction (TIMI) 3 flow (89.4 % versus 87.1 %, p = 0.03), a significantly higher rate of post-procedural myocardial blush grade 3 (48.8 % versus 36.5 %, p < 0.0001), and less distal embolization (6.0 % versus 9.3 %, p = 0.008), without any benefit in terms of 30-day mortality (2.5 % versus 2.6 %, p = 0.88). No difference was observed in terms of coronary perforations (0.27 % versus 0.07 %, p = 0.24). The authors concluded that this meta-analysis demonstrates that, among patients with AMI treated with percutaneous coronary
intervention, the use of adjunctive mechanical devices to prevent distal embolization is associated with better myocardial perfusion and less distal embolization, but without an apparent improvement in survival.

Chauhan and Kawamura (2007) noted that pulmonary embolism (PE) is a common cardiovascular disease with significant mortality. Some patients with large PE are not eligible for current treatment options such as thrombolysis or surgical embolectomy. These investigators reported their experience of percutaneous rheolytic thrombectomy (PRT) using the AngioJet system combined with adjunctive local thrombolytic therapy and inferior vena cava (IVC) filter placement to treat massive or sub-massive PE in patients ineligible for current treatment options. Of the 14 consecutive patients ineligible for thrombolysis or embolectomy treated with PRT, 10 patients had massive PE (6 patients were hypotensive and 4 patients had intractable hypoxemia) and 4 patients had sub-massive PE. Adjunctive local thrombolysis was performed in 5 patients. An IVC filter was placed in 11 patients. Angiographic success based on Miller score was achieved in 13 patients (92.9 %). Procedure success was seen in 12 patients (85.7 %). Procedural mortality occurred in 1 patient (7.1 %) who presented in cardiogenic shock and non-fatal hemoptysis occurred in 1 patient (7.1 %). Total in-hospital mortality occurred in 3 patients (21.4 %). On a mean follow-up of 9 months, all 11 survivors had noted significant improvement in symptoms without recurrence. The authors concluded that percutaneous rheolytic thrombectomy using the AngioJet may be a treatment option for patients with massive or sub-massive PE who may not be eligible for thrombolytic therapy or surgical embolectomy.

In a multi-center, randomized, 2-arm, prospective study, Migliorini et al (2010) examined if rheolytic thrombectomy (RT) before direct infarct artery stenting as compared with direct stenting (DS) alone results in improved myocardial re-perfusion and clinical outcome in patients with AMI. Eligible subjects were patients with AMI, angiographic evidence of thrombus grade 3 to 5, and a reference vessel diameter greater than or equal to 2.5 mm. Co-primary end points were early ST-segment resolution and (99m)Tc-sestamibi infarct size. An \( \alpha \) value = 0.05 achieved by
both co-primary surrogate end points or an α value = 0.025 for a single primary surrogate end point would be considered evidence of statistical significance. Other surrogate end points were TIMI flow grade 3, corrected TIMI frame count, and TIMI grade 3 blush. Clinical end points were a composite of major adverse cardiovascular events at 1, 6, and 12 months. From December 2005 to September 2009, 501 patients were randomly allocated to RT before DS or to DS alone. The ST-segment resolution was more frequent in the RT arm as compared with the DS alone arm: 85.8% and 78.8%, respectively (p = 0.043), while no difference between groups were revealed in the other surrogate end points. The 6-month major adverse cardiovascular events rate was 11.2% in the thrombectomy arm and 19.4% in the DS alone arm (p = 0.011). The 1-year event-free survival rates were 85.2 +/- 2.3% for the RT arm, and 75.0 +/- 3.1% for the DS alone arm (p = 0.009). The authors concluded that although the primary efficacy end points were not met, the results of this study support the use of RT before infarct artery stenting in patients with AMI and evidence of coronary thrombus.

Barbieri and colleagues (2011) stated that with the diffusion of implantable ventricular assist pumps in heart failure patients refractory to treatments or ineligible to transplantation, acute aortic valve and device thrombosis is an unusual but potentially increasing complication. These investigators reported a novel application of Angiojet rheolytic thrombectomy for acute and massive thrombosis of the native aortic valve and of the left ventricular assist device in a heart failure patient. The clinical value of this approach has yet to be determined.

Dashti et al (2013) noted that cerebral venous sinus thrombosis (CVT) is an uncommon cause of stroke that is usually treated medically with intravenous heparin therapy followed by long-term anti-coagulation therapy. These researchers presented a series of patients with CVT who underwent rheolytic thrombectomy with the AngioJet as a first-line adjunctive treatment in addition to standard anti-coagulation therapy. Prospectively maintained endovascular databases at 2 institutions were retrospectively reviewed. The available clinical and imaging data were compiled at each institution and combined for
analysis. Over 18 months, 13 patients (6 men and 7 women; age range of 17 to 73 years, median age of 45 years) with CVT were treated with rheolytic thrombectomy. Immediate (partial or complete) re-canilization of the thrombosed intra-cranial sinuses was achieved in all patients. At a median radiographical follow-up of 7 months there was continued patency of all re-canalized sinuses. Clinical follow-up was available on 9 patients: modified Rankin score of 0 in 4 patients, 1 in 3 patients and 6 in 2 patients. The authors concluded that this series demonstrated the feasibility of performing mechanical thrombectomy as a first-line treatment for acute CVT. This technique facilitates the prompt restoration of intracranial venous outflow, which may result in rapid neurological and symptomatic improvement. The findings of this study need to be validated by well-designed studies.

Bonvini et al (2013) PE associated with hemodynamic instability has exceedingly high mortality. While intravenous thrombolysis is considered the therapy of choice, percutaneous mechanical thrombectomy may represent an alternative treatment. In a pilot study, the impact of AngioJet RT in PE associated with cardiogenic shock was assessed in a single-center prospective feasibility study. A total of 10 consecutive PE patients in cardiogenic shock were included in the study -- 6 patients had thrombolysis contraindications, 8 were intubated before the RT procedure and 6 had experienced cardiac arrest prior to the RT procedure. The RT procedure was technically successful in all cases. The Miller index improved from 25 to 20 (p = 0.002). The shock index decreased from 1.22 to 0.9 (p = 0.129). Thrombolytic agents were administered during or after the procedure in 4 patients because of progressive clinical deterioration. Seven patients died in the first 24 hours: 2 from multi-organ failure, 1 from post-anoxic cerebral edema, and 4 from progressive right heart failure. The 3 survivors had favorable outcomes at 1 year. The authors concluded that the findings of this study suggested that the AngioJet RT procedure may be safely performed in PE patients with cardiogenic shock. However, despite angiographic and hemodynamic improvements, the procedure does not appear to influence the dismal prognosis of these high-risk patients.

Borhani Haghighi et al (2014) performed a comprehensive
literature review on endovascular treatment of cerebral venous sinus thrombosis (CVST) including pharmacological and mechanical thrombolysis. These investigators searched the English literature on CVST from 1990 to 2012 for all case reports or case series of mechanical thrombectomy. A total of 64 patients were treated in all published studies. The techniques for mechanical thrombectomy included rheolytic thrombectomy with an AngioJet device (46.9 %), clot retraction with the Penumbra system (4.7 %), clot retraction with a Fogarty catheter (1.6 %), clot retraction with a microsnare (3.1 %), balloon venoplasty without stenting (18.7 %), balloon venoplasty with stenting (4.7 %), and an amalgam of techniques (18.7 %). Nine (16.1 %) patients died. At the most recent follow-up, 40 (62.5 %) patients had no disability or minor disability and 7 (10.9 %) patients had major disability. The authors concluded that randomized multi-institutional clinical trials with larger number of participants are needed to sufficiently compare the effect of intra-sinus thrombolysis and mechanical thrombectomy to standard-of-care anti-coagulation therapy.

An UpToDate review on “Treatment of acute pulmonary embolism” (Tapson, 2014) states that rheolytic embolectomy (using a rheolytic embolectomy catheter (i.e., the AngioJet embolectomy system)), rotational embolectomy, suction embolectomy, thrombus fragmentation, and ultrasound plus low-dose thrombolytic therapy are techniques that have been utilized to reduce the embolic burden in patients with acute PE. Case series using these techniques are small and none of the techniques has been compared with other forms of therapy in randomized trials. This review states that “Larger studies are needed to determine which, if any, catheter technique is most effective compared to alternative treatment modalities”.

Garcia and colleagues (2015) reported procedural and patient outcomes of endovascular treatment for lower-extremity deep vein thrombosis (DVT) with RT. A total of 32 sites in the United States and Europe enrolled patients with DVT in the Peripheral Use of AngioJet Rheolytic Thrombectomy with a Variety of Catheter Lengths (PEARL) registry. Patient characteristics and outcomes data were collected from consenting patients who
underwent AngioJet RT at investigative sites from January 2007 through June 2013. A total of 329 patients were enrolled, with 67% of patients undergoing an AngioJet procedure within 14 days of the onset of symptoms. Four treatment approaches using AngioJet RT were identified: (i) RT without lytic agent in 4% of patients (13 of 329), (ii) pharmacomechanical catheter-directed thrombolysis (PCDT) in 35% (115 of 329), (iii) PCDT and catheter-directed thrombolysis (CDT) in 52% (172 of 329), and (iv) RT in combination with CDT in 9% (29 of 329). Median procedure times for RT alone, PCDT, PCDT/CDT, and RT/CDT were 1.4, 2, 22, and 41 hours, respectively (p < 0.05, Kruskal-Wallis test).

Procedures were completed in less than 24 hours for 73% of patients, with 36% of procedures completed within 6 hours; 86% of procedures required no more than 2 catheter laboratory sessions. The 3-, 6-, and 12-month freedom from re-thrombosis rates were 94%, 87%, and 83%, respectively. Major bleeding events occurred in 12 patients (3.6%), but none was related to the AngioJet procedure. The authors concluded that the PEARL registry data demonstrated that rheolytic PCDT treatment of DVT is safe and effective and can potentially reduce the need for concomitant CDT and intensive care.

Siddiqui and colleagues (2015) stated that cerebral venous thrombosis is generally treated with anti-coagulation. However, some patients do not respond to medical therapy and these might benefit from mechanical thrombectomy. These investigators evaluated safety and effectiveness of mechanical thrombectomy in patients with cerebral venous thrombosis, by performing a systematic review of the literature. They identified studies published between January 1995 and February 2014 from PubMed and Ovid, and included all cases of cerebral venous thrombosis in whom mechanical thrombectomy was performed with or without intra-sinus thrombolysis. Good outcome was defined as normal or mild neurological deficits at discharge (modified Rankin Scale, 0 to 2). Secondary outcome variables included peri-procedural complications and re-canalization rates. This review included 42 studies (185 patients); 60% of patient had a pre-treatment intracerebral hemorrhage and 47% were stuporous or comatose. AngioJet was the most commonly used device (40%). Intra-sinus thrombolysis was used in 131 patients
(71 %). Overall, 156 (84 %) patients had a good outcome and 22 (12 %) died; 9 (5 %) patients had no re‐canalization, 38 (21 %) had partial, and 137 (74 %) had near to complete re‐canalization. The major peri-procedural complication was new or increased intracerebral hemorrhage (10 %). The use of AngioJet was associated with lower rate of complete re‐canalization (odds ratio [OR], 0.2; 95 % confidence interval [CI]: 0.09 to 0.4) and lower chance of good outcome (OR, 0.5; 95 % CI: 0.2 to 1.0). The authors concluded that the findings of this systematic review suggested that mechanical thrombectomy is reasonably safe; however, controlled studies are needed to provide a definitive answer on its safety and effectiveness in patients with cerebral venous thrombosis.

**Deep Vein Thrombosis:**

Robertson and colleagues (2016) stated that DVT occurs in approximately 1 in 1,000 adults every year, and has an annual mortality of 14.6 %. In particular, ilio‐femoral DVT can lead to recurrent thrombosis and post-thrombotic syndrome (PTS), a painful condition which can lead to chronic venous insufficiency, edema, and ulceration. It causes significant disability, impaired quality of life (QOL), and economic burden. Early thrombus removal techniques have been advocated in patients with an ilio‐femoral DVT in order to improve vein patency, prevent valvular dysfunction, and reduce future complications, such as PTS and venous ulceration. One such technique is PMT, a combination of catheter-based thrombectomy and catheter-directed thrombolysis. These investigators evaluated the effects of PMT versus anti-coagulation (alone or with compression stockings), mechanical thrombectomy, thrombolysis, or other endovascular techniques in the management of people with acute DVT of the ilio-femoral vein. The Cochrane Vascular Information Specialist searched the Specialized Register (last searched December 2015) and the Cochrane Register of Studies (last searched December 2015). These investigators searched clinical trials databases for details of ongoing or unpublished studies and the reference lists of relevant articles retrieved by electronic searches for additional citations; RCTs in which patients with an ilio-femoral DVT were allocated to receive PMT versus anti-coagulation, mechanical
thrombectomy, thrombolysis (systemic or catheter directed thrombolysis), or other endovascular techniques for the treatment of ilio-femoral DVT. At least 2 review authors independently assessed studies identified for potential inclusion. They found no RCTs that met the eligibility criteria for this review; they identified 1 ongoing study. The authors concluded that there were no RCTs that assessed the effects of PMT versus anti-coagulation (alone or with compression stockings), mechanical thrombectomy, thrombolysis, or other endovascular techniques in the management of people with acute DVT of the ilio-femoral vein that met the eligibility criteria for this review. They stated that further high-quality RCTs are needed.

Berencsi and associates (2017) noted that most of the patients with ilio-femoral thrombosis treated with anti-coagulants only are affected with PTS that worsens the patients' QOL. In the acute phase of proximal DVT catheter-directed (CDT) and PMT may be a reasonable alternative therapeutic method. These researchers summarized their results using these methods. Since 2009, a total of 24 patients with ilio-femoral DVT were treated with these endovascular procedures and with stenting at the authors’ Institution. The median age of the patients was 35.83 ± 15.9 years, the female: male ratio was approximately 2:1. The mean time between the onset of the symptoms and the procedures was 11 days; CDT alone was performed in 8 patients, thrombus aspiration in addition to CDT using AngioJet device in 16 patients; in 19 cases the procedure was completed with venous stenting. During the follow-up, these investigators performed ultrasound (US) examinations and estimated the severity of PTS by Villalta-scale. The total recanalization-rate was more than 50 %, which even improved during the follow-up. The total lysis time and the amount of used recombinant tissue plasminogen activator decreased significantly by applying the AngioJet. They did not find any severe PTS among these patients during the follow-up visits. The authors concluded that these findings suggested that these methods can be used efficiently and safely in the treatment of acute ilio-femoral DVT.

**Acute Aortic Occlusion:**
Gursoy and colleagues (2017) reported an endovascular procedure in a patient with acute aortic occlusion causing critical limb ischemia. Following thrombus debulking with AngioJet system, aorto-iliac patency was achieved with bilateral iliac artery stent placement creating new aortic bifurcation. The authors concluded that PMT may provide effective debulking of thrombus; it may be utilized before stenting, and may also be curative in selected cases. These preliminary findings need to be validated by well-designed studies.

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<th>CPT Codes / HCPCS Codes / ICD-10 Codes</th>
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ICD-10 codes covered if selection criteria are met:
| I21.01 - I22.9 | ST elevation (STEMI) and non-ST elevation (NSTEMI) myocardial infarction |
| I25.10 - I25.9 | Atherosclerotic heart disease of native coronary artery |
| I25.3 - I25.6 | Atherosclerotic heart disease of native coronary artery |
| I25.810 - I25.9 | Atherosclerotic heart disease of native coronary artery |
| I25.201 - I25.99 | Atherosclerosis of native arteries of the extremities |
| I27.001 - I27.099 | Atherosclerosis of bypass graft of the extremities |
| I73.9 | Peripheral vascular disease, unspecified |
| I74.3 - I74.4 | Embolism and thrombosis of arteries of lower extremities |
| I74.5 | Embolism and thrombosis of iliac artery |
| N18.6 | End stage renal disease |
| N18.9 | Chronic kidney disease, unspecified |

**ICD-10 codes not covered for indications listed in the CPB (not all-inclusive):**

| G08 | Intracranial and intraspinal phlebitis and thrombophlebitis |
| I26.01 - I26.99 | Pulmonary embolism |
| I67.6 | Nonpyogenic thrombosis of intracranial venous system |
| I82.210 - I82.290 | Other acute venous embolism and thrombosis |
| I82.601 - I82.629 | Other acute venous embolism and thrombosis |
| I82.a11 - I82.a19 | Other acute venous embolism and thrombosis |
| I82.b11 - I82.b19 | Other acute venous embolism and thrombosis |
| I82.c11 - I82.c19 | Other acute venous embolism and thrombosis |
| I82.890 - I82.90 | Other acute venous embolism and thrombosis |
| I82.220 - I82.221 | Embolism and thrombosis of inferior vena cava [deep vein thrombosis] |
| I82.401 - I82.429 | Acute embolism and thrombosis of deep veins of lower extremity [deep vein thrombosis] |
| N28.0 | Ischemia and infarction of kidney [acute renal artery thrombosis] |

The above policy is based on the following references:


with acute or recent myocardial infarction. Am J Cardiol. 1999;83(7):994-999.


44. Tapson VF. Treatment of acute pulmonary embolism. UpToDate [online serial]. Waltham, MA: UpToDate; reviewed April 2014.


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Amendment to
Aetna Clinical Policy Bulletin Number: 0568 AngioJet Rheolytic Thrombectomy System

There are no amendments for Medicaid.